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(3) Initials of the Referencer ✓

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

P.W.D. DEPARTMENT

G.O. No. 1444.
~~B.P. No.~~

Press.
~~Mis.~~

Dated 10. 6. 1884. 197 .

V. S. M.

Not to be folded or roughly handled

27

10th June 1884, No. 1444 W., Public Works.

1444

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General.
Account.

Read—the following papers :—

From Colonel J. BEATTY, R.E., Superintending Engineer, IV Circle, to the Chief Engineer, Public Works Department, dated Ootacamund, 10th May 1884, No. $\frac{244\ C}{E.W.}$

With reference to G.O., No. 906 W., of 2nd ultimo, and your memorandum, No. 23 E., of 17th idem, I have the honor to report further on the brick-making operations at the Lake brick-field, and to forward a letter from the Executive Engineer, Nílgiris, giving explanation of the delays that have occurred.

2. I estimate, by last year's experience, that not more than eight lakhs of bricks will be required annually for works about Ootacamund, and these should be made at the new brick-field in the six fair weather months—October, November, December, January, March, and April. Frosts destroy the raw bricks in February, and the other five are rainy months. Assuming eight lakhs are required, it would be necessary to turn out 1⅓ lakhs a month, which could easily be done with proper supervision; 108,000 are reported to have been burnt in April, and there are 96,000 raw bricks now in hand.

3. The probable cost of the works, when complete, will be not less than Rs. 20,000 including tools and plant. If this outlay is to be recouped in five * years, it will add 5 rupees a thousand to the cost of the bricks. Interest † on outlay I take at 1 rupee a thousand. If the plant be worth Rs. 4,000, 10 per cent. for wear and tear would be Rs. 400 or eight annas a thousand. The total for sinking fund, wear and tear of plant, and interest on capital would therefore come to 6½ rupees a thousand.

* At Rs. 4,000 a year.

† At 4 per cent. Rs. 800.

4. The present cost of the bricks appears to be higher than is stated in your memorandum. From information given me on the ground it appears to be as follows :—

	RS.	A.	P.
Cost of digging clay and carrying it to the pugging machine ...	1	0	0
Cost of making the raw bricks, including loading and unloading kilns	5	0	0
Fire-wood	6	0	0
Firing	1	0	0
Sanding moulds, &c.	0	8	0
Total per thousand ...	13	8	0

5. Adding to the cost of the bricks the charges estimated in paragraph 3 Rs. 6½, we get a total of Rs. 20, which is the rate at present charged to works. This rate will, however, I fully expect, be found capable of reduction when we get an intelligent superintendent to direct the work and check waste.

6. What has still to be aimed at is the manufacture of a superior class of brick, greater outturn up to $1\frac{1}{3}$ or $1\frac{1}{2}$ lakhs of burnt bricks a month, and a reduced price.

7. To secure this result the two requisites are an efficient and trustworthy superintendent and a steam-engine. The superintendent should live on the spot, and have no other work to attend to while brick-making is going on. He has to see that orders are attended to, that labor is not wasted, and that all parts of the manufacture are done in the best manner possible; but his presence is specially needed night and day while firing is in progress, as coolies are apt to go to sleep. The steam-engine is wanted to work the brick-making machine, without which the clays cannot be so effectively and cheaply crushed, mixed and moulded.

8. Mr. Seager* is, I understand, willing to resign his post in the municipality for Rs. 75 a month and a house or accommodation similar to what he now rents in the bazaar for Rs. 35. I have asked for his offer in writing.

* *Vide* letter attached.

9. I am also in communication with a practical brick † and tile maker at Bangalore, who is willing to come for three months to show his ability in such work. I have written to ask the pay he would expect.

† *Vide* letters enclosed.

10. The 10 horse-power engine that worked a brick-making machine at the Lawrence Asylum some years ago is, I understand, still in very good order, and is for sale at Devála.

11. I shall report separately on the subject of paragraph 4 of your memorandum as soon as the matter has been investigated.

ENCLOSURE.

From J. C. LARMINIE, Esq., Executive Engineer, Nilgiri Division, Ootacamund, to the Superintending Engineer, IV Circle, dated 2nd May 1884, No. 55.

With reference to the Chief Engineer's memorandum, No. 23 E., of 17th April, forwarded with your endorsement, No. 212 N.A., of 21st idem, I have the honor to submit the few following remarks:—

1. If various circumstances connected with brick-manufacture generally, and with the Lake brick-field in particular, be taken into consideration, I do not think there is any great reason to be disappointed with the outturn from the Lake field.

2. For comparison I shall mention a few facts in connection with Messrs. Groves' works at Coonoor. These were commenced in November 1882. From their commencement till after manufacture was started they were specially supervised by an English foreman experienced in work of the kind, who had *no other work* to attend to. The expenditure on these works has been fully four times what the Lake works have cost. There is in addition to a large drying-shed and brick-kiln a complete set of efficient brick and tile making machinery, including a steam engine, a water-wheel, crushing and pugging mills; and with all these advantages it was only within the last couple of months that anything like really good bricks and tiles were turned out.

3. Work at the Lake field was only commenced last August. As soon as the idea of a Hoffman's kiln was abandoned, I obtained sanction as soon as possible to build the first drying-shed, and as soon as it was ready brick-making was begun and I made the proposal to try the trench kiln. This was done, and seeing that we could never get on with only one drying-shed, I proposed the second, which, when sanctioned, was at once put in hand and is not yet quite finished. It should not be forgotten that in the course of routine to obtain sanction to all the above took time. The second shed was sanctioned in G.O., No. 3027 W., of 25th October 1883, and Messrs. Groves put it up without much delay; all the wood had to be procured from the Wynaad.

4. As soon as the weather looked fairly settled bricks were dried on the open hacks, but so many bricks have been lost both by contractors and the department, through rainy weather coming on, when least expected, that I was very chary of using the open hacks; even as it is some bricks have been spoiled.

5. Again there was a delay in the latter part of January and the month of February of about thirty-nine days, owing to heavy frost, when brick-making had to be stopped altogether, and the Pongal feast and drill of the sappers in January caused further delay. A proposal was made last October to purchase a portable engine which was for sale at Calicut. It is to be regretted that, as this proposal was not approved of by Government, sanction was not given to the expenditure of a larger sum to purchase a new engine. Could the brick-making and pugging machine now at the lake be worked, brick-manufacture could go on much quicker and the bricks turned out would be far better, but at the same time it must be remembered that the outturn is limited by the capacities of the drying-sheds and of the trench kiln.

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6. One advantage of the latter is that some three-fourths of the length away from the furnace end can be filled with comparatively damp bricks; only the bricks composing the first three or four furnaces need be perfectly dry; as firing goes on the heated air and smoke dries the remainder of the kiln, but even under these conditions it will hardly ever be possible to burn more than two kilns, *i.e.*, 140,000 bricks per mensem.

7. If a larger outturn is considered necessary, the capacity of the trench kiln (it can easily be done) must be increased and more drying-sheds must be built.

8. But the experiment is now only in its infancy, and during the next six months, when the demand for bricks will be small, a stock will accumulate possibly sufficient for next season's requirements. Hitherto the bricks have been used as fast as made.

9. Paragraphs 3 and 4 of the Chief Engineer's memorandum shall receive attention; the idea in charging Rs. 20 per 1,000 bricks was to wipe out the debits to stock as soon as possible.

10. It is not known what would be considered a fair period within which the expenditure should be recouped.

Since writing the above I have just (30th April) visited Messrs. Groves' brick and tile works and obtained some information, which will, I think, definitely settle the question of the Lawrence Asylum engine being capable of driving the Lake brick machine, and will consequently be a reply to paragraph 3 of G.O., No. 9064, of 2nd April 1884.

From previous experience of such engines my opinion all along has been that it was not powerful enough.

Messrs. Groves' engine is supposed to be 6 horse-power; whatever power it may be, it is more powerful than the Lawrence Asylum one, having a larger boiler and a greater length of stroke and diameter of cylinder. But it is not powerful enough, Messrs. Groves' manager informed me, for their pugging machine, even though supplemented by the water wheel, and their pugging machine is not very much larger or more difficult to drive than the one at the lake.

Regarding the question of *water-power* at the Lake brick-field, only the amount of surplus run off from the weir would be available, and this only during the rainy months. During the south-west monsoon the quantity is very small, and altogether I do not believe it would be sufficient to warrant the erection of water-power machinery; however, to form a positive opinion a more extended experience based on daily discharges from the lake would be necessary. Of course from, say, November to end of April there would be no water at all available, unless the lake was run off.

Reference paragraph 3 of G.O., No. 906 W., of 2nd April 1884.

From Colonel J. BEATTY, R.E., Superintending Engineer, IV Circle, to the Chief Engineer, Public Works Department, dated Ootacamund, 16th May 1884, No. 240 E.W.

With reference to paragraph 4 of your note, No. 23 E., of 17th ultimo, I have the honor to inform you that an examination* of the field seems to show that the average depth of clay suitable for brick-making may safely be taken at $1\frac{1}{2}$ feet.

* By trial pits.

2. The area taken up was 12 acres, and at a very moderate estimate three-fourths of this area or 392,040 square feet will be available to furnish clay for brick-making.

3. The total quantity of clay will therefore be not less than 588,060 cubic feet; and assuming that one cubic foot will make 14 bricks, the total number of bricks that may be made from that field will be 8,232,840.

4. As stated in my letter, No. 244 C., of 10th instant, I estimate that eight lakhs of bricks annually will satisfy the demand in connection with public works at Ootacamund, so that the field is capable of supplying all the bricks that will be wanted for the next ten years.

ORDER—dated 10th June 1884, No. 1444 W., Public Works.

Recorded.

2. The Government understand that the services of a capable superintendent have been secured, and that an offer has been made for an 8 horse-power portable engine, which is believed to be suited to the work.

2

3. It is hoped that, with this assistance, the quality of the bricks will be improved and the outturn increased, while the price is reduced.

(True Extract.)

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintending Engineer, IV Circle.
" General Superintendent, Public Works Stores.

Exd. A. Aubert.
Spare Copies

1444

2. It is suggested that Mr. Seager, who was so successful with the Lawrence Asylum and Kandal brickfields, should, with the concurrence of the President of the municipality under whom he is now employed, be induced to accept service in the Public Works Department, when his practical knowledge of brick-making at Ootacamund could be utilised.

3. The 6 horse-power engine at the Lawrence Asylum should be at once obtained, and used to the best advantage. Seeing that it is proposed to work the machine by means of *two* horses, it is not understood why a 6 horse-power engine should be considered inadequate. Further information on this point seems necessary. It should also be reported whether water-power cannot be utilised.

(True Extract.)

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintending Engineer, IV Circle.
" General Superintendent, Public Works Stores.

Exd. E. Fernandez.
Spare Copies

1444

8. At this, as at the other brickfields about Ootacamund, there are a number of different clays, grey, red, yellow, &c., and in order to make good bricks it is necessary that the best mixtures should be ascertained and used, that all lumps should be crushed and that the clays used should be thoroughly mixed. It is found that this can only be done by the brick-making machine, which crushes all lumps, mixes and moulds. The ordinary pugging machines allow lumps of hard soil to pass through them, which are fatal to good brick-making.

9. But the brick-making machine requires 18 convicts to work it, 6 to each of the three arms; bullocks were a failure, as they could not be induced to pull together.

10. A trial is about to be made with horses, and if that does not succeed, a steam engine is the only alternative. A portable, 10 horse-power, double cylinder, steam engine would do well, but would probably be more expensive to use than horses. The little 6 horse-power engine from the Lawrence Asylum would evidently not be powerful enough to work the machine; and the Devala Mining Company has decided not to part with the engine they had lately intended to sell. So that, if it be eventually decided to get an engine, it will probably have to be ordered out from England.

11. The best bricks hitherto made at the new brickfield were those turned out by the machine. About two lakhs of raw bricks have been made there up to date, of which about 1,08,000 have been burnt and the bricks fit for use have been of a quality superior to ordinary country bricks, but still very inferior to what were in former years made at Lovedale and Kandal, and what, it is expected, will yet be made at the Lake brickfields when the best mixtures have been ascertained, and the machine can be worked.

ENCLOSURE.

From J. C. LARMINIE, Esq., Executive Engineer, Nílgiri Division, to the Superintending Engineer, IV Circle, dated Ootacamund, 10th March 1884, No. 603.

In reply to your memorandum, No. 222 C., N.I., of the 8th instant, I have the honor to state that I think there is every prospect of my being able to make fair bricks at the Lake field. I doubt if it will ever be possible to make as good bricks here as are made at the Government brickfields, Madras, or those at the Railway works, Coimbatore (Pódanúr), for the simple reason that such good clay does not exist here.

2. But that by mixing various kinds of clay together good bricks can be made is proved by the bricks of which Government House is built; they were all made at Kandal under the supervision of a European overseer or maistry, Mr. Seager, who was employed for many years in this division (not on the permanent Public Works Department staff) specially for brick-making at the Lawrence Asylum and at Kandal, and it is to be greatly regretted that his services were dispensed with, when he took service under the municipality.

3. When I joined this division, contracts had been entered into for the manufacture of bricks at the Lawrence Asylum and at Kandal, the specification being that two kinds of clay, to be pointed out by the department, should be used; but the real fact was there was no one here then (in the department) who had had any experience of the different clays or of the proportions in which they should be mixed, so the result was an experiment. The bricks were made and have nearly all been used, but they could not be called good.

4. The experience gained indicated that probably a better brick could, with the imperfect means available for thoroughly incorporating various kinds of clay together, be made of a single kind of clay. This was accordingly tried at the Lake trench kiln and the result was a better brick than the contract bricks of Kandal.

5. About this time I came to know of Mr. Seager's connection with the departmental brick-making, and thinking his experience might be of use, I obtained his services for a week. He tried various mixtures of clay, and after a good deal of trouble in efforts to work the brick-making machine by bullocks, he succeeded in making a few rough but fairly sound bricks.

6. The same mixture of clays worked in the ordinary pug mills did not turn out nearly so well; in fact were inferior to the first trial kiln of one kind of clay, all owing no doubt to defective pugging and the absence of the crushing obtained by the rollers when the clays go through the brick-making machine.

7. I have now, in consequence, reverted to a very simple mixture, *i.e.*, the single clay first tried with a small portion of a stronger clay, and I propose to continue this until I am able to fairly start the brick-making machine.

8. Similar machines are, in England, worked by horses. As verbally explained, I cannot now obtain the portable engine from Pundalur, so I shall endeavour to make a trial with hired horses. Should it be successful, it will then be a question as to whether it will be more advantageous to purchase a pair of horses or a 10 horse-power, portable engine. The latter would cost in Bombay Rs. 3,900.

9. Probably a pair of horses sufficiently good might be picked up in Madras for Rs. 600 or 700. The cost of keep would be about Rs. 50 per month, which would be much cheaper than the cost of working an engine; but the engine would last for many years, and there is always the chance of horses falling sick, and of course a pair purchased cheap would not be young animals.

From Colonel J. BEATTY, R.E., Superintending Engineer, IV Circle, to the Chief Engineer, Public Works Department, dated Coimbatore, 21st March 1884, No. 159 E.W.

In reply to your memorandum of 11th January 1884, No. 47 C., I have the honor to state that the engine from the Lawrence Asylum was not moved to the Lake brickfield because it appeared from experience in working the brick-making machine that that engine would not be powerful enough and that it would be useless making the experiment; but if you wish it, it shall be done. The Lawrence Asylum engine is only 6 horse-power,* while the machine would probably need a 10 horse-power engine to work it efficiently.

1 Copy of letter, No. 603, of 10th March, from the Executive Engineer, Nílgiri division.

* *Vide* paragraph 10 of my letter, No. 147 E.W., of 12th instant.

From the same officer, dated Coimbatore, 24th March 1884, No. 166 E.W.

In continuation of my letters, Nos. 147 and 159, of 12th and 21st instant, respectively, I have the honor to forward a further report in regard to working the brick-making machine and the necessity for purchasing a steam engine for use at the Lake brickfield, Ootacamund.

ENCLOSURE.

From J. C. LARMINIE, Esq., Executive Engineer, Nílgiri Division, to the Superintending Engineer, IV Circle, dated Ootacamund, 19th March 1884, No. 616.

In continuation of my letter, No. 603, of 10th instant, I have the honor to state that, after further consideration of the question, I believe that, all things considered, it will, in the long run, be more satisfactory to at once procure a 10 horse-power, double cylinder, portable engine for the Lake brickfield. Such an engine, working for a couple of months, would, through the brick-machine, turn out enough bricks for an ordinary season's requirements, and it might then be used for any other work, *e.g.*, to drive a stone-crushing machine, which could, I should think, be most economically employed here now that Government are giving annual grants for the various ghât roads. I can hardly say that I have made a trial with horses. I procured a pair from Mr. Browne and, after some little difficulty, succeeded in getting them to work the brick-machine while empty. When first put in they plunged away, breaking the harness.

I was unable to continue the trial owing to the unsound and rotten state of the harness, which, after the brick-machine was loaded with clay, would not stand the strain. Mr. Browne cannot supply any other. Should it be thought worth-while making a more satisfactory trial, perhaps it would be possible to get the loan of a pair of artillery horses and their harness, which ought to be strong enough for the purpose. The only harness required in addition to head gear, would be the collars and traces.

ORDER—dated 2nd April 1884, No. 906 W., Public Works.

The Government regret to observe that the brick-making operations at Ootacamund have, so far, not proved very satisfactory. It is hoped that further efforts, under close supervision, will bring about some improvement in the quality of the bricks turned out.

2. It is suggested that Mr. Seager, who was so successful with the Lawrence Asylum and Kandal brickfields, should, with the concurrence of the President of the municipality under whom he is now employed, be induced to accept service in the Public Works Department, when his practical knowledge of brick-making at Ootacamund could be utilised.

3. The 6 horse-power engine at the Lawrence Asylum should be at once obtained, and used to the best advantage. Seeing that it is proposed to work the machine by means of *two* horses, it is not understood why a 6 horse-power engine should be considered inadequate. Further information on this point seems necessary. It should also be reported whether water-power cannot be utilised.

(True Extract.)

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintending Engineer, IV Circle.
„ General Superintendent, Public Works Stores.

Exd. E. Fernandez.
Spare Copies

1444

GENERAL.
ACCOUNT.

Govt. of (1884) Madras.

PUBLIC WORKS.

Dated April, 2nd.

Recd. *Encl.*

G.O., 2nd April 1884, No. 906 W.

1444

APRIL.

Brick-making Operations at Ootacamund

Passing orders regarding the —

Read the following papers:-

Supg Engineer's Office, 4th Circle.
Camp Ootacamund, 10th May 1884.

No 244 C
P.W. From

1444

The Superintending Engineer,
Fourth Circle.

To

The Chief Engineer,
P.W. Department.

Sir,

Enclosure 8

With reference to G. O. No 906 W of 2d Ultimo, and your Memo: No 23 C of 17th idem, I have the honor to report further on the brick-making operations at the Lake Brickfield and to forward a letter from the Executive Engineer, Nilgiris giving explanation of the delays that have occurred.

2. I estimate by last year's experience that not more than eight lakhs of bricks will be required, annually, for works about Ootacamund, and these should be made at the New brickfield in the six fair weather months, October, November, December, January, March and April. Frosts destroy the raw bricks in February, and the other five are rainy

months

months. Assuming eight lakhs are required, it would be necessary to turn out 1/3 lakhs a month, which could easily be done with proper supervision; 108,000 are reported to have been burnt in April, and there are 96,000 raw bricks now in hand

3. The probable cost of the works when complete will be not less than Rs 20,000 including Tools and Plant. If this outlay is to be recouped in five* years, it will add 5 Rupees a thousand to the cost of the bricks. Interest* on outlay I take at 1 Rupee a thousand. If the plant be worth Rs: 4,000, 10 per cent for wear and tear would be Rs: 400 or eight annas a thousand. The total for sinking fund, wear, and tear of plant and interest on capital would therefore come to 6½ Rupees a thousand

× at 4000 Rs a year.

* at 4 per cent Rs: 800

4. The present cost of the bricks appears to be higher than is stated in your Memo. From information given me on the ground, it appears to be as follows:-

The rate of 10 workmen to at the Field

Cost of digging clay and carrying it to the pugging machine —— Rs: 1-"-"

This allows 6 annas per cubic yard - 1 c.ft = 10 brick 2⅔ c.yds = 1000

Cost of making the raw bricks including loading and unloading

42

1444

Kilns —————— Rs: 5-0-0
Fire wood —————— " 6-0-0
Firing —————— " 1-0-0
Sanding moulds &c. —————— " 0-8-0
Total per thousand, Rupees 13-8-0

These charges seem out of all proportion -

5. Adding to the cost of the bricks, the charges estimated in para 3, Rs: 6½, we get a total of Rs: 20 which is the rate at present charged to works. This rate will, however, I fully expect, be found capable of reduction when we get an intelligent Superintendent to direct the work and check waste.

I hope so.

6. What has still to be aimed at is the manufacture of a superior class of brick, greater outturn up to 1⅓ or 1½ lakhs of burnt bricks a month, and a reduced price.

7. To secure this result, the two requisites are an efficient and trustworthy Superintendent and a steam engine. The Superintendent should live on the spot, and

The Supt has been secured and offer has been made for a suitable engine - 8 h p.

month. Assuming eight lakhs are required, it would be necessary to turn out 1⅓ lakhs the month, which could easily be done with proper supervision; 108,000 are reported to have been burnt in April, and there are 96,000 raw bricks now in hand

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This allows … bannas for the … yard - 1 c.ft = 14 brick… 2⅔ c.yds = 1000 …

Cost of making the raw bricks including loading and unloading Kilns —— Rs: 5-0-0

These charges seem out of all proportion -

Fire wood ——	" 6-0-0
Firing ——	" 1-0-0
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I have the honor to be,
Sir,
Your most obedt: servant.

L. Beatty Col, R.E.,
Supg Engineer, 4th Circle.

1444

9ob ~ 2.4.84

From

The Supg Engineer,
Fourth Circle.

SECRETARY TO GOVERNMENT
12 MAY 84
DEPARTMENT

To

The Chief Engineer,
P. W. Department.

Dated 10th
Despd } May 1884.

No. 244 C / P.W.

Enc. 8

40. 11+44 15 a/ 10th June/84

Brickmaking operations –

Reporting further on the — of the Lake Brick field

await further report promised.

13-5-84

P.L.S. 32/5.

Enclosure

Enc 4

No. 55

Executive Engineers office
Nilgiri Division
Ootacamund May 1884

Print

1444

From

The Executive Engineer,
Nilgiri Division,
Ootacamund.

To

The Superintending Engineer,
4th Circle.

Sir,

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1st. If various circumstances connected with brick manufacture generally and with the Lake Brick field in particular, be taken into consideration, I do not think there is any great reason to be disappointed with the outturn from the Lake Field.

For comparison I shall mention a few facts in connection with Messrs. Groves' works at Coonoor. These were commenced in November 1882; from their commencement till after manufacture was started they were

10

were Specially Supervised by an English Foreman experienced in work of the kind, who had no other work to attend to. The expenditure on these works has been fully four times what the Lake works have cost. There is in addition to a large drying Shed and brick kiln a complete set of efficient brick and tile making machinery, including a steam engine, a water wheel, crushing and pugging mills and with all these advantages, it was only within the last couple of months, that anything like really good bricks and tiles were turned out.

Work at the Lake Field was only commenced last August. As soon as the idea of a Hoffman's Kiln was abandoned, I obtained Sanction as soon as possible to build the first drying Shed and as soon as it was ready, brick making was begun and I made the proposal to try the Trench Kiln; this was done and seeing that we could never get on with only one drying Shed, I proposed the Second, which, when Sanctioned, was at once put in hand and is not yet quite finished.

2r

It should not be forgotten that in the course of routine, to obtain Sanction to all the above, took time. The Second Shed was Sanctioned in G. O. No. 3027 W of 25th October 1883 and

and Messrs. Groves put it up without much delay; all the wood had to be procured from the Wynaad.

3.

As soon as the weather looked fairly settled bricks were dried on the open hacks, but so many bricks have been lost both by contractors and the Department, through rainy weather coming on, when least expected, that I was very chary of using the open hacks. [illegible]

Again there was a delay in the latter part of January and the month of February of about ~~twenty five~~ [illegible] days, owing to heavy fost when brick making had to be stopped altogether; and the Pongal Feast and drill of the Sappers in January caused further delay. A proposal was made last October to purchase a portable engine which was for sale at Calicut. It is to be regretted that, as this proposal was not approved of by Government, Sanction was not given to the expenditure of a larger sum to purchase a new engine. Could the brick making and pugging machine now at the Lake be worked, brick manufacture could go on much quicker and the bricks turned out would be far better, but, at the same time it must be remembered that the outturn is limited by the capacities of the Drying Sheds and of the Trench Kiln.

One advantage of the latter is that some 3/4ths of the length away from the furnace end,

11

end, can be filled with comparatively damp bricks, only the bricks composing the first three or four furnaces need be perfectly dry, as, as firing goes on, the heated air and smoke dries the remainder of the Kiln, but even under these conditions, it will hardly ever be possible to burn more than two Kilns, i. e. 140,000 bricks per mensem.

If a larger outturn is considered necessary, the capacity of the trench Kiln (it can easily be done) must be increased and more drying sheds must be built.

But the experiment is now only in its infancy and during the next six months, when the demand for bricks will be small, a stock will accumulate possibly sufficient for next Season's requirements. Hitherto the bricks have been used as fast as made.

Paras 3 and 4 of the Chief Engineer's Memo, shall receive attention; the idea in charging Rs 20 per 1000 bricks, was to wipe out the debits to Stock as soon as possible.

It is not known what would be considered a fair period within which the expenditure should be recouped.

I have the honor to be
Sir
Your most obedient Servant

Executive Engineer
2/5

1444

Since writing the above I have just (30th/4) visited Mess^rs Groves' brick and tile works and obtained some information, which will, I think, definitely settle the question of the Lawrence Asylum engine being capable of driving the Lake brick machine; and will consequently be a reply to para 3 of G.O. No. 9064 of 2nd April 1884

From previous experience of such engines my opinion all along has been that it was not powerful enough.

Mess^rs Groves engine is supposed to be 6. H.P. whatever power it may be, it is more powerful than the Lawrence Asylum one, having a larger boiler and a greater length and diameter of cylinder. But it is not powerful enough, Mess^rs Groves' manager informed me, for their pugging machine even though supplemented by the water wheel and their pugging machine is not very much larger or more difficult to drive than the one at the Lake.

Regarding the question of water power at the Lake Brick Field – Only the amount of surplus run off from the weir would be available, and this only during the rainy months. During the S. W. Monsoon the quantity is very small and altogether I do not believe it would be sufficient, to warrant the erection of water power machinery; however to form a positive opinion a more extended experience

12 based

1444

based on daily discharges from the Lake, would be necessary. Of course from - say - November to end of April there would be no water at all available, unless the lake was run off.

ECP
2/3

1447/8

From

The Superintending Engineer
IV Circle

(2)

Dated 16th May 1884
Desp: 27th – do
Recd 28

No. 2400
E.W.
Ro. 144 W of 10th June/84
Enclo: Nil.

Lake brick field

Informs the result of an examination by trial pits what the average depth of clay that may safely be taken as suitable for brick making from the — and the total number of bricks that may be made from the same.

0.29-5-84

No. 16 of 1884.

From:

R. Mullane
Brick and Tile manufacturer
No. 14 Richmond Road. Bangalore

10/5/84

Col. Beatty R. E.
Supg: Engineer
Ootacamund

Sir.

With reference to my interview with you the other morning & to the message sent to me by the Supervisor Kureem Khan Sahib. I beg to state that at present I am in receipt of 75/Rs from the Municipality. Mr [illegible] offered me the house at Kandal but as I have a large family & children who have to attend school, that house (which is very damp) will not suit me.

I beg therefore that you will consider, that at my present age the prospect of a permanent: post with pension holds no enticement for me; the advantage of a pensionable post I beg may be added to my pay in the shape of house rent.

16

1444

Art at Ootacamund, not alone in the manufacture of good Bricks and (Tiles for Roofing) but also Glazed Flooring Tiles, and Glazed Terrace Tiles. also Bread and

20

From

No. 16 of 1884.

From:

R. Mullane
Brick and Tile manufacturer
No. 14 Richmond Road. Bangalore
2nd May 1884

1444

I am at present living in Hope Villa - rent Rs 35/- which I beg you will see your way to pay together with a salary of Rs 75/-.

Of course during burning I will stay on the field in one of the small rooms

I ~~beg~~ to Remain
Sir
Your ~~most~~ obedient ~~servant~~

W. T. ...

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Glazed Flooring Tiles, and Glazed
Terrace Tiles, also Bread and

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0.29-558

From

14441

0.29-5-86

No 16 Of 1884.

14441

From:

R. Mullane
Brick and Tile manufacturer
No 14 Richmond Road. Bangalore
2nd May 1884

No 17 Of 1884

14441

No 14, Richmond Road
Bangalore, 7th May 1884

From,

R. Mullane
Brick & Tile Manufacturer

To,

The Superintending Engineer P.W.D.
of Ootacamund

Sir,

Referring to my letter No 15 of of the 1st May 1884. That portion of it where I stated that I offered my services temporarily for three Months, to superintend the manufacturing of Bricks and Tiles, I should have added, and during that time if I manufacture excellent Bricks and give you satisfaction, I would be glad if I got permanent employment, or for two or three years, I will not expect any Salary if

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W. D.

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Art at Ootacamund alone
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and (Tiles for Roofing) but also
Glazed Flooring Tiles, and Glazed
Terrace Tiles, also Bread and

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From

I do not give you satisfaction, I am Confident I will do so, by giving you excellent Bricks and Tiles &c &c, And at a much Cheaper rate than inferior Bricks and Tiles can be procured for. Sir, I beg you may be so kind to cause a reply to be sent me.

I Am
Sir
Your very obedient Servant
R. Mullane
Brick & Tile Manufacturer

P.S. If you are so kind to give me a trial, I would be very thankful if you would cause Railway Tickets for myself and two Servants also passes ~~for~~ by Horse or Bullock Tram from where the Railway terminates to Ootacamund

R M

4824

0.29-5-84

No. 16 Of 1884.

From:

R. Mullane
Brick and Tile manufacturer
No. 14 Richmond Road. Bangalore
2nd May 1884

1444

To,

The Superintending Engineer P. W. D.
Of Ootacamund

Sir,

In my letter of the 1st Inst. I sent only one Copy of Testimonial, as to character and qualifications.

I now ~~beg~~ beg to submit for your consideration two additional Testimonials, as on further consideration I thought you may require some further proof as to character and qualification.

I also omitted mentioning, that in the event if I did not manufacture really good Bricks I would forgo any Claim to Salary, I now do so. I promise not to look for, or lay claim for any Salary, if I do not turn out good Bricks, and that if they be not passed by you, or the Executive Engineer, I will abide by your decision.

But, Sir, I do not fear on this point. as I never burnt a Brick And Tile which did not pass Muster; All I want is to get a good opportunity to develop my Art at Ootacamund. not alone in the manufacture of good Bricks and (Tiles for Roofing) but also Glazed Flooring Tiles, and Glazed Terrace Tiles, also Bread and

Butter Coolers, Glue and oil Jars, as well as flower vases &c. &c. I beg to remark that I only want an opening, and, Sir, if you will be so kind to help me, I am confident I will give you every satisfaction. I think more of developing my art, than any consideration as to salary; I know that when you approve of my work, you will not under-value it.

I Am
Sir
Your very Obedient Servant
R Mullane
Brick & Tile Manufacturer

Copies of Testimonials

I Certify that I have known Color Sergeant R Mullane for the last two years and Nine months: He joined the 28th Regt as a volunteer from the 83rd Regt, and was shortly afterwards appointed Color Sergeant of my company; He has performed the duties of Sergt Major and Quarter master Sergeant of the Left Wing and Detachments, at Satara, for a period of twelve months, in addition to the duties of Color Sergeant.

He is strictly Honest, Sober, and Intelligent, with a very good knowledge of accounts: His duties while in my command were arduous, and I always found him hard working, and persevering, with a large amount of general knowledge; By his records I find he has served more than 21 years, and has borne the most Irreproachable character, He is in possession of the Distinguished Medal for Good Conduct: He is now about to retire on his pension: I trust I may hear of his advancement.

Signed) C. J. Hutton Major
Left Wing 28th Regt } 3rd Jany 1865

True Copy
R Mullane
Brick and Tile Manufacturer

No. 15 of 1884.

1444

EXECUTIVE ENGINEER'S OFFICE
GEN'L NO. 913M
5 MAY 1884
P.W.D.
NILGIRIS.

From,
R. Mullane,
Brick and Tile, Manufacturer
No. 14 Richmond Road
Bangalore.

To,
The Superintending Engineer P.W.D
of Ootacamund

Sir, I beg to offer my services (temporarily) for three months, to Superintend the manufacturing of Bricks and Tiles: I have had twelve years practical Experience at home, and the past ten years in this Country; five years have been in the Jail Depart., as Head Jailor, where I instructed more than five thousand prisoners in the Art of Brick, Tile, and Pottery making, and I can truthfully assert that my Bricks were in no way inferior to those made in England, what I now would wish, is to develop my art in Ootacamund, My whole heart is centred in this Art, and I trust, Sir, you may be so kind to entertain my services as a temporary measure for three months.

I care very little as to the amount of Salary you give me at first; But should I turn out excellent Bricks, I would then expect a good Salary.

My Tiles are of various shapes and measure 14" long × 10" wide × 7/16" thick; I thoroughly understand the making and Glazing of Hexangular, Octangular and square shaped flooring and Terrace Tiles, my Glazing will last for a long life time without chipping off. The Glazing stuff is very cheap. I also make the Mangalore pattern Tiles.

I personally superintend the firing of my Kilns at Night, I remain close to them and I take one watch of five hours, and then remain in an easy Chair, waking up every now and then to see if my assistant

and the fire men are attending to the fires.
If the firing is left to Natives supervision
the men are sure to fall asleep. So I never
trust any one to superintend the firing
of my Kilns at night. by superintending
the firing of my Kilns at night. I obtain
the following results

1st Class Bricks which ring like metal 70 per Cent
2nd Class do 20 per Cent
and 3rd Class do 10 per Cent.

In the Selection of my clay I am very particular
in looking after lime. if I find the slightest
traces of Lime I reject it at once.

When I find Clay stiff and will not
become plastic I mix one or more different
description with it. weather and put it
for many days, and after it
it becomes quite plastic, and after it is pugged
into Bricks, and dried in the Sun (if the
wind is not very strong) not more than
five per cent of the bricks crack in the
drying. Nearly the whole secret of Brick
making lays in the mixing and preparation
of the Clay, and subsequently the burning
of the Bricks, Too hot a fire should
never be put on at first starting the firing.

I also understand the Glazing of the coarser description
of Potter. and when I was Head Jailor in
the North west Provinces. I supplied the
Troops with Wash hand basins, Urinals and
Privy Pans, Spittoons, Feeding Cups &c &c.

I am a pensioned Color Sergeant, and in receipt
of the Distinguished Medal for Good Conduct.
Sir. I will not trouble you by sending you
many Testimonials as to Character and
conduct. I send you a copy of the
last one I received.

I would be glad to work
with prison Labour.

If you are so kind to entertain
my services I would leave at once
on receiving a Railway pass for
myself and two servants, whom I have
instructed in the art of making excellent
Bricks, and the firing of Brick Kiln
These men are 1st Class Brick makers

I am
Sir
Your most
obedient Servant
R Mullane
Brick and Tile maker

No. 13 of 1884.

1444

From,
R. Mullane.
Brick and Tile manufacturer
No. 14 Richmond Road
Bangalore

To,
The Executive Engineer

EXECUTIVE ENGINEER'S OFFICE
No. 1/213 M
5 MAY 1884
P.W.D.
NILGIRIS

Mr. Mullane served under me as Head Jailor of the Meerut Central Prison for three years.

He is an excellent Officer, and a very good Brick and Tile maker. He Glazes Pottery very well, he has a good of ~~the~~ all the Jail work

Meerut
27th March
1882

Signed) H Holmes Surgeon
Superintendent Central Prison
Meerut.

1444

Bangalore
1st May 1884

True Copy
R Mullane

I thoroughly understand the art of Glazing water pipes, and Flooring Tiles, and my method of Glazing will last for a long life time without chipping of. The Glazing stuff is not expensive.

When I was Head Jailor at Meerut I made and supplied the Troops and Hospitals with the undermentioned articles, for their wash houses and Latrines, as follows,

Glazed wash hand basins,
Do urinals and urinal dishes
Do Privy Pans.

Glazed Spittoons with moveable lids.
Do. Feeding cups.
{Bread Coolers, with stand and water dishes to prevent ants
getting in}
Butter Coolers with water dishes.

Relative to the cheapest and best Brick Kiln for burning bricks.

Where the ground is high I use the Circular French Kiln, as very little heat escapes, the firing takes place from fire holes which are on top of the Kiln. The Bricks are much better burnt than they are in any other Kiln. Much less fuel is expended, and a much larger percentage of first and Second Class bricks and tiles secured; The Bricks and Tiles when thoroughly burnt in the French Kiln yield 70 per cent first Class and 20 per cent Second Class, and 10 per cent third class Bricks and Tiles; All description of Tiles (not glazed) can be burnt in this Kiln, as well as bricks, but for Glazed Pottery ware I use the Circular Flame Kiln, I have used Hoffman's Kiln, the Circular Kiln on the level ground, and the Clamp or Oblong Kiln, but the expenditure of fuel and the percentage of first and Second Class bricks and Tiles falls far short of the turn out from the Circular trench Kiln; The circular flame Kiln is only used for Glazed Articles and flower Urns.

I thoroughly understand the properties of the different descriptions of Clay, and after proving them, and finding that there is no sign of lime in them, I then proceed to mixing two or more different sorts of Clay together, weather it, and then place it in water pits for fifteen or sixteen days, after which I pug it in the pits by natives trampling on it for 6 hours, and when I find it sufficiently plastic I remove it to the Pug Mills (if required to be further pugged) if it does not require

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further pugging, I place it in large heaps for two or three days, Covering it over with waste grass, and on the third or fourth day Commence using it.

The Bricks moulded from this Clay (unless there is a very strong wind) should not have more than five per cent of cracked bricks, when dried in the sun; I have made four thousand fire Bricks in Bangalore, and by well weathering the Clay and keeping it in water pits for 15 days, when I moulded this Clay, and dried the bricks in the sun (without putting a cover over them) I positively assert that there were not any bricks cracked in the sun drying, I know this seldom occurs.

1944

Where the slightest appearance of Lime is found in the Clay, it should be at once rejected.

I will guarantee to turn out equally as good and well finished bricks as are manufactured by the hand and mould, in England; My bricks have the corner pointed, the sides and ends quite smooth, and free from holes.

In the firing of my Kilns I never trust the night work to any one to look after. I personally watch my Kilns at night, the result has been I never had a really bad burnt Kiln. If the Superintendence is left to natives at night they are sure to go to sleep, and the fires go down, which spoil the bricks, and entail an additional expense for Fuel to get the fires up again.

I have also a practical knowledge of Carpentry, and can get an indifferent Carpenter to make any shape of Brick or Tile mould which may be required at a very small cost.

I manufacture very handsome roofing tiles, as well as Glazed Flooring and Terrace Tiles. The flooring and Terrace Tiles are of the following shapes, Hexangular, Octangular, and square shaped. On the reverse side of this sheet will be found a list of the various articles I manufacture.

I beg to remark that the last post I held was as Head Jailor of the Nagpur Central Prison and as I did not get good health there and having heard that the Climate of Bangalore was very healthy, I resigned my situation although I was then drawing a Salary of two hundred rupees per mensem, with a free

8

1444

— Copies of Testimonials —

I certify that I have known Color Sergeant A. McIlvane for the last two years and nine months. He joined the 28th Regiment as a volunteer from the 83rd Regiment, and ~~was~~ was very shortly afterwards appointed Color Sergeant of my Company. He has performed the duties of Sergeant Major and Quarter Master Sergeant of the Left Wing and Detachments 28th Regiment, at Sattara for a period of twelve months, in addition to the duties of Color Sergt.

He is strictly honest, sober, and intelligent, with a very good knowledge of accounts; his duties while under my command were arduous, and I always found him hard working, and persevering, with a large amount of General Knowledge.

By his records, I find he has served more than 21 years, and has borne the most Irreproachable Character.

He is in possession of the Distinguished Medal for good Conduct. I trust I may hear of his advancement, as he is now about to retire on his pension.

(Signed) C. J. Hutton Major
Commdg. Left Wing 28th Regt.

Genl
Sect

1444

PUBLIC WORKS DEPARTMENT.

No. 1444 W

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the 10th June/84

READ the following

From
The S. E. IV Circle — (Ho. No. 244C/SW of 10th May/84)
(Do — do — do (" " 240/SW of 16th — " — ")

10

Recorded.

2- The Government understand that the services of a capable Superintendent have been secured, and that an offer has been made for an 8 H.P portable engine, which is believed to be suited to the

4824 &c.

Govt. of (1884) Madras.

PUBLIC WORKS.

(27)

Dated

Recd.

Dch.

G.O. 10 June 1884, No. 1444

Brick-making operations at Volavi[illegible]

Any further report by the Supg. Engr. on the — recorded with remarks.

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Sent to the Receipt Register